REMARKS

Claims 1, 3-6 and 8-14 are pending and under consideration in this application. Claims 6 and 14 are amended herein. Support for the amendment to claim 14 may be found in claim 6 as filed originally. Support for the amendment to claim 6 is shown in Fig. 1 and described page 5, lights 13-25. Reconsideration is requested based on the foregoing amendment and the following remarks.

Response to Arguments:

The Applicants appreciate the consideration given to their arguments, and the new grounds of rejection. Further favorable consideration is requested.

Objections to the Claims:

Claim 14 was objected to for an informality. Claim 14 was amended in substantial accord with the Examiner's suggestion. The Examiner's suggestion is appreciated. Withdrawal of the objection is earnestly solicited.

Claim Rejections - 35 U.S.C. § 101:

Claims 6, 8, 9, and 10 were rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter. Claim 6 has been amended to recite a "computer readable medium storing a cache program," in substantial accord with the Examiner suggestion. The Examiner's suggestion is appreciated.

Claims 6, 8, 9, and 10 are thus submitted be directed to statutory subject matter. Withdrawal of the rejection of claims 6, 8, 9, and 10 is earnestly solicited.

Claim Rejections - 35 U.S.C. § 102:

Claims 1, 3-6, and 8-14 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 6,505,200 to Ims et al. (hereinafter "Ims"). The rejection is traversed. Reconsideration is earnestly solicited.

The second clauses of claims 1 and 11 recite:

> A cache memory that stores in a correlated form the retrieval condition and the retrieval result.

Ims neither teaches, discloses, nor suggests "a cache memory that stores in a correlated form the retrieval condition and the retrieval result," as recited in claims 1 and 11. Ims, rather, is

automatically *synchronizing* one data store with another data store, even though the two stores may not share a common format. In particular, as described column 4, lines 52-56:

> An object of the present invention is to provide a technique whereby one data store can be automatically synchronized with another data store, even though the two stores may not share a common format.

Since Ims is automatically synchronizing one data store with another data store, even though the two stores may not share a common format, Ims is not setting "a cache memory that stores in a correlated form the retrieval condition and the retrieval result," as recited in claims 1 and 11.

In Ims, moreover, the cached objects *component* provides for storing, and for automatically refreshing, cached objects. In particular, as described at column 9, lines 53-59:

> The present invention uses a "cached objects" component (referred to equivalently herein as a "cache manager") which caches objects that are used by middleware applications to interact with back-end data sources, where the middleware application functions as a surrogate for a requesting client application. The cached objects component provides for storing, and for automatically refreshing, these objects.

Since, in Ims, the cached objects component provides for storing, and for automatically refreshing, cached objects, Ims is not setting "a cache memory that stores in a correlated form the retrieval condition and the retrieval result," as recited in claims 1 and 11.

In Ims, moreover, a cached object stored by the cached objects component has a set of *input* properties and a set of *output* properties, not a "retrieval condition" or a "retrieval result," as recited in claims 1 and 11. In particular, as described at column 10, lines 21-25:

> Each object stored by the cached objects component has a set of input properties and a set of output properties (which might not be set when the object is cached) representing the information to and from the object's corresponding back-end data source.

Since, in Ims, a cached object stored by the cached objects component has a set of input properties and a set of output properties, Ims is not setting "a cache memory that stores in a correlated form the retrieval condition and the retrieval result," as recited in claims 1 and 11.

In Ims, moreover, a cached object includes processing logic which describes how the object interacts with the *back-end* data source, and an execution method which invokes this processing logic, not a "retrieval condition" or a "retrieval result," as recited in claims 1 and 11. In particular, as described at column 10, lines 21-28:

> Further, each cached object preferably includes processing logic which describes how the object interacts with the back-end data source, and an execution method

> which invokes this processing logic.

Since, in Ims, a cached object may include processing logic which describes how the object interacts with the back-end data source, and an execution method which invokes this processing logic, Ims is not setting "a cache memory that stores in a correlated form the retrieval condition and the retrieval result," as recited in claims 1 and 11.

Finally, in Ims, the input properties and values thereof are used as an index to *locate* objects stored in the cached objects component, not a "retrieval condition" or a "retrieval result," as recited in claims 1 and 11. In particular, as described at column 10, lines 28-32:

> The input properties and values thereof are used as an index to locate objects stored in the cached objects component, where those stored objects may be categorized as either read-access (RA) or write-access (WA).

Since, in Ims, the input properties and values thereof are used as an index to locate objects stored in the cached objects component, Ims is not setting "a cache memory that stores in a correlated form the retrieval condition and the retrieval result," as recited in claims 1 and 11.

Furthermore, in Ims, a caching policy specifies when the object is to be *periodically* refreshed, such as at a particular time of day; upon occurrence of a specified event; upon an elapsed time since the last refresh, rather than according to a "retrieval condition and the retrieval result," as recited in claims 1 and 11. In particular, as described at column 13, lines 56-62:

> The caching policy of an RA object preferably specifies when the object is to be periodically refreshed. For example, an object may be refreshed at a particular time of day; upon occurrence of a specified event; upon an elapsed time since the last refresh; etc. This refresh process thereby ensures that a relatively up-to-date version of the back-end data is being used when responding to client read requests.

Since, in Ims, a caching policy preferably specifies when the object is to be periodically refreshed, Ims is not setting "a cache memory that stores in a correlated form the retrieval condition and the retrieval result," as recited in claims 1 and 11.

In Ims, moreover, there is retrieval logic in the execution script of the cached object, not a "retrieval condition" or a "retrieval result," as recited in claims 1 and 11. In particular, as described at column 14, lines 51-62:

> For example, cached object HAO2 shown at 312 is refreshed by executing the retrieval logic in the execution script of the cached object. This retrieval logic causes a request to be sent 303 to the back-end data source at host 320, which returns 304 a fresh copy of data values to be used for refreshing the cached

> object (i.e. re-populating the object's output properties) in the cache 300. Whether a cached copy is already cached or a fresh copy must be retrieved is transparent to the requesting application, which operates as though an actual access (shown in FIG. 3A as imaginary access 325) had been made directly to the back-end data source and a copy had been retrieved in real time.

Since, in Ims, a caching policy preferably specifies when the object is to be periodically refreshed, Ims is not setting "a cache memory that stores in a correlated form the retrieval condition and the retrieval result," as recited in claims 1 and 11.

Finally, in Ims, refresh *logic* is stored with or associated with selected replicated read-access objects, and update *logic* is stored with or associated with selected replication write-access objects, not a "retrieval condition" or a "retrieval result," as recited in claims 1 and 11. In particular, as described at column 5, lines 64-67, continuing at column 6, lines 1 and 2:

> Performing the replication may further comprise executing the refresh logic stored with or associated with selected replicated read-access objects for which the queued refresh requests are queued, and executing the update logic stored with or associated with selected replication write-access objects for which the queued update requests are queued.

Since, in Ims, refresh logic is stored with or associated with selected replicated read-access objects, and update logic is stored with or associated with selected replication write-access objects, Ims is not setting "a cache memory that stores in a correlated form the retrieval condition and the retrieval result," as recited in claims 1 and 11.

The fourth clauses of claims 1 and 11 recite:

> An update processing unit that reads the retrieval condition from the cache memory upon fulfillment of the cache update condition.

Ims neither teaches, discloses, nor suggests "an update processing unit that reads the retrieval condition from the cache memory upon fulfillment of the cache update condition," as recited in claims 1 and 11. In Ims, rather, there is retrieval *logic* in the execution script of the cached object, not a "retrieval condition," as discussed above.

Moreover, in Ims, the object's update operation is being applied to the *back-end data source* at host 340, not the cached object. In particular, as described at column 16, lines 58-66:

> When the update policy of an object having elements queued in its update queue 352 is triggered (for example, reaching a certain time of day when low-priority batched mode requests are to be processed), the updates from the queue 352 are processed by executing the update script of the corresponding object. This execution causes the object's update operation to be applied 353 to the back-end data source at host 340, by execution of the object's script using the input property values from the queued element.

Since, in Ims, the object's update operation is being applied to the back-end data source at host 340, not the cached object, Ims is not reading "the retrieval condition from the cache memory upon fulfillment of the cache update condition," as recited in claims 1 and 11.

The fourth clauses of claims 1 and 11 recite further:

> Retrieves data as the retrieval result from the database using the retrieval condition.

Ims neither teaches, discloses, nor suggests an update processing unit that "retrieves data as the retrieval result from the database using the retrieval condition," as recited in claims 1 and 11. In Ims, rather, there is retrieval *logic* in the execution script of the cached object, not a "retrieval condition" or a "retrieval result," as discussed above.

In Ims, moreover, the object's update operation is being applied to the *back-end data source* at host 340, not the cached object, as discussed above. Since, in Ims, the object's update operation is being applied to the back-end data source at host 340, not the cached object, Ims is not retrieving "data as the retrieval result from the database using the retrieval condition," as recited in claims 1 and 11.

Finally, the fourth clauses of claims 1 and 11 recite:

> Updates the retrieval result in the cache memory corresponding to the retrieval condition.

Ims neither teaches, discloses, nor suggests an update processing unit that "updates the retrieval result in the cache memory corresponding to the retrieval condition," as recited in claims 1 and 11. In Ims, rather, there is retrieval *logic* in the execution script of the cached object, not a "retrieval condition" or a "retrieval result," as recited in claims 1 and 11.

In Ims, moreover, the output property values of the cached WA object and/or a corresponding RA object may optionally be re-populated to reflect the current version of the object at the *back-end* data store, not the "cache memory," as recited in claims 1 and 11. In particular, as described at column 16, lines 66 and 67, continuing at column 17, lines 1-15:

> If the object reaches its commit point or otherwise successfully completes the update process (i.e. does not encounter an unrecoverable error during script execution), then the queued update is removed 354 from the update queue 342. Once all queued elements have been processed for an object, the output property values of the cached WA object and/or a corresponding RA object may optionally be re-populated to reflect the current version of the object at the back-end data store.

Since, in Ims, the output property values of the cached WA object and/or a corresponding RA object may optionally be re-populated to reflect the current version of the object at the back-end data store, Ims is not updating a "retrieval result in the cache memory corresponding to the retrieval condition," as recited in claims 1 and 11. Claims 1 and 11 are submitted to be allowable. Withdrawal of the rejection of claims 1 and 11 is earnestly solicited.

Claims 3, 4, and 5 depend from claim 1 and add further distinguishing elements, while claims 12 and 13 depend from claim 11 and add further distinguishing elements. Claims 3, 4, 5, 12, and 13 are thus also submitted to be allowable. Withdrawal of the rejection of claims 3, 4, 5, 12, and 13 is also earnestly solicited.

Claims 6, 8, 9, and 10:

The third clause of claim 6 recites:

> Reading the retrieval condition from the cache memory upon fulfillment of the cache update condition, retrieving data as the retrieval result from the database using the retrieval condition, and updating the retrieval result in the cache memory corresponding to the retrieval condition.

Ims neither teaches, discloses, nor suggests "reading the retrieval condition from the cache memory upon fulfillment of the cache update condition, retrieving data as the retrieval result from the database using the retrieval condition, and updating the retrieval result in the cache memory corresponding to the retrieval condition," as discussed above with respect to the rejections of claims 1 and 11. Claim 6 is thus also submitted to be allowable for at least those reasons discussed above respect to the rejections of claims 1 and 11. Withdrawal of the rejection of claim 6 is earnestly solicited.

Claims 8, 9, and 10 depend from claim 6 and add further distinguishing elements. Claims 8, 9, and 10 are thus also submitted to be allowable. Withdrawal of the rejection of claims 8, 9, and 10 is earnestly solicited.

Claim 14:

The second clause of claim 14 recites:

> Storing a retrieval request received from a terminal that includes a retrieval condition and a retrieval result retrieved using the retrieval request in a correlated form in a cache memory.

Ims neither teaches, discloses, nor suggests " storing a retrieval request received from a terminal that includes a retrieval condition and a retrieval result retrieved using the retrieval

request in a correlated form in a cache memory," as discussed above with respect to the rejection of claim 1.

The fifth clause of claim 14 recites:

> Reading the retrieval condition from the cache memory upon fulfillment of the cache update condition.

Ims neither teaches, discloses, nor suggests "reading the retrieval condition from the cache memory upon fulfillment of the cache update condition," as discussed above with respect to the rejection of claim 1.

The sixth clause of claim 14 recites:

> Retrieving data as the retrieval result from the database using the retrieval condition.

Ims neither teaches, discloses, nor suggests "retrieving data as the retrieval result from the database using the retrieval condition," as discussed above with respect to the rejection of claim 1.

The seventh clause of claim 14 recites:

> Updating the retrieval result in the cache memory corresponding to the retrieval condition.

Ims neither teaches, discloses, nor suggests "updating the retrieval result in the cache memory corresponding to the retrieval condition," as discussed above with respect to the rejection of claim 1. Claim 14 is thus also submitted to be allowable for at least those reasons discussed above respect to the rejections of claims 1 and 11. Withdrawal of the rejection of claim 14 is earnestly solicited.

Conclusion:

Accordingly, in view of the reasons given above, it is submitted that all of claims 1, 3-6 and 8-14 are allowable over the cited references. Allowance of all claims 1, 3-6 and 8-14 and of this entire application is therefore respectfully requested.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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